

Lawn Lights User's Manual

Version 11/15/07

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Quick Start Guide

- **Tripping Hazard** - do not use in areas where foot traffic is expected.
- Do not use Lawn Lights near roads and sidewalks where snow removal equipment may damage or destroy your set
- Briefly plug the Lawn Lights in before you start to ensure they are in working order
- Unroll the lights in arc, loop, or semi-circle patterns; **avoid using straight lines**
- To maximize coverage, keep roughly **10 feet of space between each pass** of lights
- Stake each light to keep the lamps above any snowfall and make the display more brilliant and reliable
- Plug this product into a Ground Fault Circuit Interrupter (GFCI) equipped power source
- Slip Magic Color Caps™ on the lamps for color, if desired
- Avoid operating the lights during daylight hours to preserve bulb longevity
- Promptly replace any burned out bulbs
- Purchase and **use a proximity type Christmas light tester** to quickly troubleshoot and identify any problems that might occur
- Purchase and **use a Bayco model KW-130 spool** to collect and store the Lawn Lights as a very highly recommended alternative to the included shipping spool
- If you reuse the shipping spool, **do not wind the string** back onto the spool by holding the spool stationary and winding the wire. Rather, **draw (roll) the string** back onto the spool as it is being spun
- To facilitate future use, roll the string back onto the spool starting with the end of the string and **finishing with the plug**
- Count the stakes as you collect them to help ensure you got them all

Please visit www.LawnLights.com for additional consumer resources!

Other highly recommended items that you will be glad you purchased:

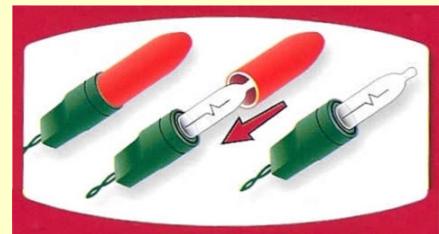
Bayco model KW-130 spool



Proximity type Christmas light tester



Magic Color Caps™



Detailed Guide

1. Preparation

The first step is to determine how many Lawn Light sets you are going to need for the area you wish to decorate. The very first thing you will need to know is the size in square feet of the area you intend to decorate. Be sure to exclude areas where you expect foot traffic, because this product is not recommended for use in those areas. You can calculate the area by multiplying its length in feet times its width in feet. If the area is unusually shaped, try dividing it up into smaller rectangular areas and then adding up the areas of each one.

Once you know the area in square feet, you can determine how many Lawn Light sets you will need by dividing the area you calculated by the Lawn Light set's approximate coverage, which is 4000 to 5000 square feet. For example, if you want to decorate an area that measures 8000 square feet, you will need 2 Lawn Lights sets. If you want to decorate an area that measures 10000 square feet, you can either use 2 Lawn Lights sets (which normally cover 8000 to 10000 square feet) and distribute the lights in the area thinly, or use 3 Lawn Lights sets (which normally cover 12000 square feet) and distribute the lights in the area more densely.

Although Lawn Lights are designed to cover approximately 4000 square feet, they can also be used to cover more area or less area, depending on how densely the lights get distributed. If you distribute the lights densely, it may look better, but will not cover as much area. Similarly, if you distribute the lights thinly, it might not look as good, but will cover more area. However, the best results are achieved when you use Lawn Lights to cover the amount of area that they are designed for decorating.

Once you know how many Lawn Light sets you are going to need for the area you wish to decorate, you need to determine whether or not the power outlets you plan to use are equipped with GFCI (Ground Fault Circuit Interrupter) circuitry protection, just as you should for any outdoor holiday lighting product. Using a GFCI is recommended because it will provide additional shock protection for people and animals/pets, and will also help prevent lamp burnouts that might occur in a rainstorm or wet environment. Operating Lawn Lights without the GFCI circuitry could cause some lamps to burn out when they become wet and find a path to ground. If this happens, it's recommended to replace each and every lamp, which can be a tedious and time-consuming procedure. It is best to avoid it altogether by powering the Lawn Lights and the rest of your outdoor holiday lighting products with a GFCI equipped power outlet.

According to www.HomeReports.com, the National Electric Code requires GFCI protection on all new outlets located outside of the house, in bathrooms, in garages, in basements, and within six feet of the kitchen sink. GFCI protection is provided either by special GFCI outlets or by special GFCI circuit breakers. Identifying a GFCI outlet is simple. GFCI outlets have two buttons on the face, one labeled "test" and one labeled "reset." Therefore, if the outlet you plan to use has a "test" and "reset" button, or if the circuit breaker that powers the outlet that you plan to use has a "test" and "reset" button, you already have GFCI protection.

If you discover that the power outlet that you plan to use is not equipped with GFCI protection, you can add GFCI protection by simply purchasing a GFCI Portable Safety Outlet. These are available at many retail and hardware stores as well as at www.LawnLights.com. Not only can you use a GFCI Portable Safety Outlet to improve the safety and reliability of the Lawn Lights product, but you can also use it for ALL of your outdoor decorations, which can benefit from GFCI protection as well. Also, when you are finished using it with the Lawn Lights product, you can continue using it anywhere else you like! It is a very useful product and increases power safety wherever you choose to use it.

Does this mean that Lawn Lights are unsafe? No more so than regular miniature Christmas light sets, net lights, or icicle lights. In actuality, Lawn Lights are not much different than regular miniature Christmas light sets, although there are some key differences. Lawn Lights are UL listed and use 3 amp fuses. Use of GFCI power is recommended for all outdoor decorations, and just happens to make the Lawn Lights product more reliable.

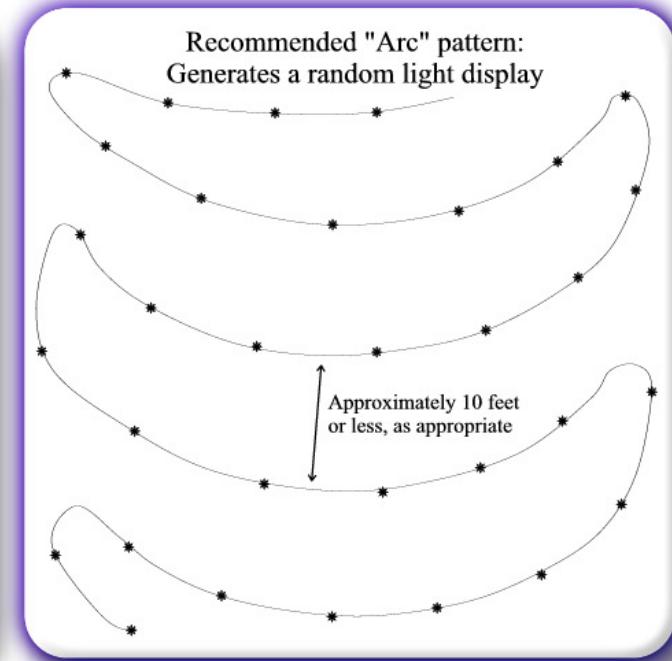
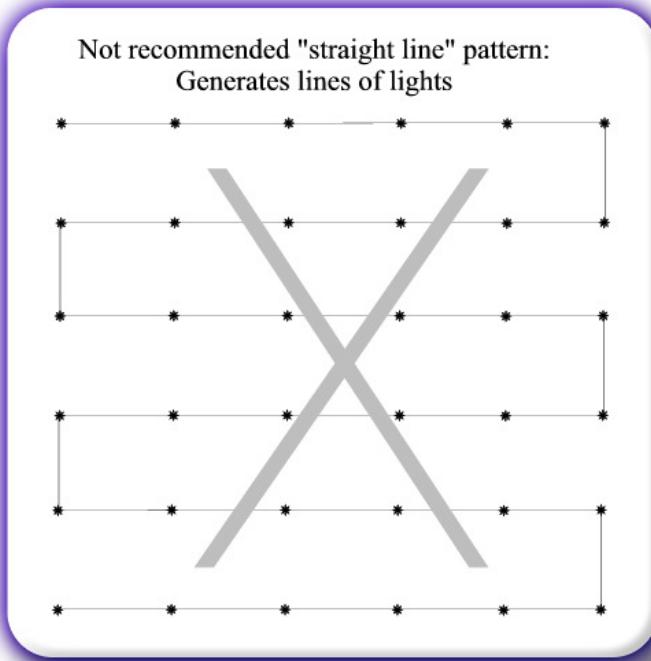
2. Set Up

You can decorate with Lawn Lights very quickly and easily. The Lawn Lights string is wound on a spool. If the plug is readily available, it is recommended that you first briefly plug the Lawn Lights in to confirm that the set is in working order. If it is not in working order, you may need to unroll the Lawn Lights off of the spool to perform some troubleshooting procedures (described later).

The plug end of the string should always be on the outside of the spool (rolled onto the spool last). If the plug is indeed on the outside of the spool and is available, you will unroll your set starting at your power source. If the plug was unfortunately wound onto the spool first and is not readily available, you will need to start at the farthest point and unroll the entire string, working towards your power source. In this event, once the string has been completely unrolled, you will probably need to drag the plug end to the power source and then appropriately reposition the lights.

You simply unroll the Lawn Lights off of the spool in the pattern that you want (arc patterns are highly recommended). It only takes 5 to 10 minutes to unroll a set of Lawn Lights in your lawn and plug them into a GFCI equipped power outlet or GFCI power outlet adapter. DO NOT hold the spool stationary and unwind the wire off of the spool. Rather, slide a broom handle or something similar through the center of the spool and while holding it, draw the string off of the spool causing it to spin. Be careful when unrolling the very end of the string off of the spool because it can whip around off of the spool and possibly strike you if it has not been secured to the spool. Since the wire poses a tripping hazard, do not use Lawn Lights in areas where foot traffic is expected, just as you would not use an extension cord in these areas. You should also attempt to keep the lights and wire far enough away from roads and sidewalks so that in the event of a significant snowfall, snow removal equipment will not get into your display and damage or destroy your set.

When unrolling the Lawn Lights, it is highly recommended that the string be laid out in “arc” or semi-circle patterns rather than straight lines. This will make the distribution of lights much more random. Avoid laying the string out in straight lines (unless of course that is what you want) because the lights will line up and appear as straight lines of lights rather than a random peppering of lights.



It is also important to keep about 10 feet of distance between each arc of lights as you pass back and forth over the lawn. This will help ensure that you will get the 4000 to 5000 square feet of coverage that the product is designed for. If you are attempting to decorate an area smaller than 4000 square feet, simply reduce the distance between each arc to something more appropriate. For instance, keeping 5 feet of distance between each arc of lights will decorate roughly 2000 square feet of area.

Once the Lawn Lights string has been unrolled in the desired pattern, it is recommended that you briefly plug the string in and verify that each bulb is lit. Sometimes a lamp may become dislodged while the string is being unrolled or the lights are being arranged. Replace any burned out or damaged bulbs. If the string does not light, perform the troubleshooting procedures (described later). Also, if you plan on adding color using Magic Color Caps™, it is recommended that you add them at this time.

Next, it is recommended that each of the lights be “staked”. This will make the display even more spectacular by making the lights more visible and appear brighter and more uniform. In the event of a rainstorm, it keeps the lamps up and out of any standing water and helps prevent lamp burnouts. It also keeps the lights visible in the event of a snowfall. “Staking” the lights requires you to insert each lamp base into a small inconspicuous stake and then push the stake into the ground. It is not very difficult and well worth the effort. Simply hold the lamp base assembly slightly higher than the head of the stake, slide the wires through the slot, and then insert the lamp base assembly into the head of the stake. This step will take an additional 10-20 minutes for each set of Lawn Lights. This time can be significantly reduced if more than 1 person performs this step. It can be a fun family function!

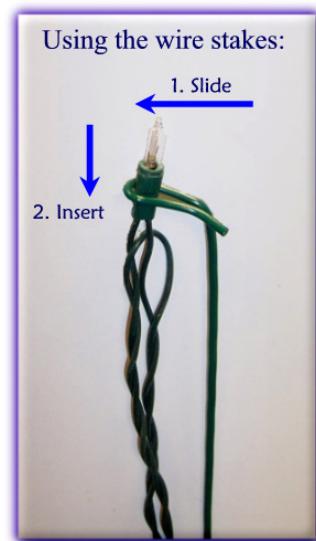
You can adjust the final height of each lamp by raising or lowering the stake in the ground. If you anticipate a moderate snowfall in your area, you will probably want to keep the lamps higher off the ground so that they remain above the snow. Depending on how far the stakes have been pushed down into the ground, several inches of snow must fall before the lights will begin to become covered. The stakes that are included with each Lawn Lights set will accommodate a snowfall of up to about 8 inches. The display is visible even with a few inches of snow covering the lamps. Some people actually prefer this unique effect. Obviously, in the event of a significant snowfall, the Lawn Lights product would become buried and eventually concealed, as would any lawn decoration.

It is also recommended that Lawn Lights be set out prior to any snowfall. The wire is a dark green color so that it blends in with the natural grass or ground color. If this wire is unrolled on top of snow, the wire will be highly visible and perhaps unsightly. However, if another snowstorm is imminent, the Lawn Lights can be set out and the new snow will then cover the wire.

3. Operation

Operating the Lawn Lights is very simple. Simply plug them into a GFCI equipped power outlet or GFCI portable safety outlet adapter. It is highly recommended that the Lawn Lights be turned off during the daylight hours in order to help preserve the bulb longevity. Timers commonly found in hardware and retail stores can do this for you automatically. The lamps have a lifespan just like ordinary light bulbs do. Operating them continuously will eventually burn them out. Should this happen, promptly replace any burned out bulbs with new bulbs (procedure described later).

Operating Lawn Lights during heavy rainstorms might cause GFCIs to trip and refuse to reset until the Lawn Lights product has dried out. This is exactly what a GFCI is supposed to do in order to protect people from electrical shock. Luckily this is not an everyday occurrence during the winter months when snow is more likely than rain.



4. Using multiple sets of Lawn Lights with a Ground Fault Circuit Interrupter (GFCI)

A certain amount of ‘trickle’ current is lost to earth ground in each set of Lawn Lights. This trickle current is usually very low and generally will not trip a GFCI by itself. However, if you are using multiple sets of Lawn Lights, these trickle currents add up and will sometimes trip a GFCI if high enough. If your GFCI frequently trips, first unplug all of your Lawn Lights, then plug each set into your GFCI outlet individually to determine if one set in particular is tripping the GFCI. Next, try plugging them all in, but add them one at a time. In very humid or damp conditions, you can usually operate 3 sets of Lawn Lights from one GFCI circuit before it will tend to begin tripping. If this appears to be the problem, you can solve it by dividing your sets among multiple GFCI circuits. This is easily accomplished when using multiple GFCI portable safety outlet adapters.



5. Disassembly

Dismantling the Lawn Lights display is even quicker and easier than setting it up! First, collect all of the stakes by pulling them from the ground and removing the lamp bases from each stake. This is not difficult and only takes 10 to 15 minutes per set. The Lawn Lights can then be quickly and easily wound on its spool in about 10 minutes per set.

Always put the Lawn Lights away in working order. It will be easier for you to diagnose and fix any problems while they are still out than it will be when you put them out the next time.

If you reuse the shipping spool, **do not wind the string** back onto the spool by holding the spool stationary and winding the wire. This will cause your string to twist up on you and cause problems. Rather, spin the spool by twisting your wrists or by other methods to **draw (roll) the string** back onto the rotating spool. This will cause far fewer problems in the end.

It is **highly recommended** that you purchase and use a Bayco model KW-130 Heavy Duty 150' Cord Capacity Reel to collect the Lawn Lights string instead of the included spool. The Bayco spool can be found in many major retail and hardware stores across the country for about \$6 to \$8. The Bayco spool will make collecting and storing the Lawn Lights **significantly faster and easier**, so do yourself a favor and get one. However, the included shipping spool works too.

Always start rolling the string back onto the spool **starting with the end of the Lawn Lights string first** so when you are done, the plug will be on the outside of the spool (rolled onto the spool last). The next time you use the set, you will be able to quickly plug the string in to test it first and will be able to start unrolling the Lawn Lights at the power source. Avoid rolling the string back onto the spool with the plug first, because you will not be able to quickly plug the string in to test it or be able to start unrolling the Lawn Lights at the power source the next time you want to use the set. Also, secure the end of the Lawn Lights string to the spool with a piece of tape so that when the string is unrolled from the spool in the future, the end of the string will not whip off of the spool and possibly strike you.



6. Troubleshooting

Sometimes a set of Lawn Lights might stop working. There are various reasons as to why this might occur. Sometimes it's because a bulb has burned out or has become dislodged from its base. Sometimes it's because an animal or rodent (squirrel, chipmunk, rabbit, etc.) has chewed through the wires. In any case, you can usually find and fix the problem very quickly if you follow the procedure below.

First, it is **highly recommended** that you purchase and use a “proximity” type Christmas light string tester. These are usually sold at discount and retail stores for about \$5. Using one of these proximity type testers will significantly reduce the amount of time and effort required to find the problem. These testers are absolutely invaluable when it comes to troubleshooting a set of Lawn Lights, so do yourself a favor and get one. Troubleshooting without a proximity type Christmas light string tester might require you to remove and test each bulb until you find the problem, which is very tedious and time consuming.



These are examples of proximity type Christmas light string testers.

A proximity type Christmas light string tester is used to sense the presence of electricity in a wire very quickly and with very little effort. When it is aimed at a wire or a bulb, the tester will indicate whether or not electricity is present there – usually with a light or an audible beep. The indicator will vary depending on what tester you are using.

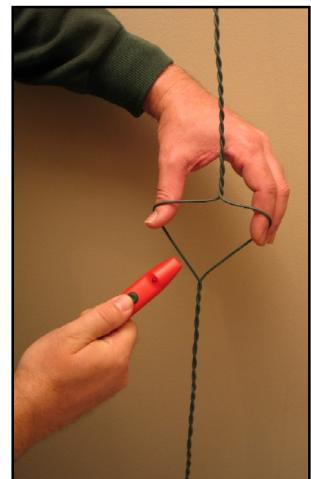
Two different troubleshooting procedures are provided here: one using a proximity type Christmas light string tester, and one without using a proximity type Christmas light string tester. The procedure that uses the proximity type Christmas light string tester is relatively quick and easy; the one that does not use the proximity type Christmas light string tester is more time consuming and tedious.

Troubleshooting procedure using a proximity type Christmas light string tester:

1) First, verify that the Lawn Lights are plugged into a live power outlet. Then, at a point roughly halfway between the plug and the very first lamp, use your proximity type Christmas light string tester to individually test each of the 2 wires. Do this by very carefully separating the 2 wires from each other by a few inches (as shown in the picture) and testing each one with your tester. You will encounter one of the following 3 results:

a) **The tester indicates the presence of electricity in both wires.** In this case (very rare), the problem resides in the plug itself (unless the wire has been cut between where you are currently testing and the plug), and is most likely poorly seated fuses. Check the plug. “Jiggle” and very lightly twist the plug a bit, and press and release the fuse lid. If the lights flicker or light, it is an indication that the fuses haven’t been seated properly in the plug, which sometimes happens. In many cases, simply taking the fuses out, putting them back in, and carefully closing the fuse lid fixes the problem.

Be careful when closing the lid that it does not disrupt the position of the fuses. Sometimes the lid will drag the fuses back into the plug with it. Be sure that the fuses touch both strips of metal in the slot.



- b) **The tester does not indicate the presence of electricity in either wire.** In this case, power is not getting to the Lawn Lights at all. Please verify that the outlet you have the Lawn Lights plugged into is in fact supplying power. It could be possible that a circuit breaker has tripped or, if the outlet is equipped with GFCI protection, the GFCI has tripped. If you are certain that the outlet is in fact supplying power, then the problem resides in the plug. Please follow the instructions listed in step a) above.
- c) **The tester indicates the presence of electricity in one wire, but not for the other wire.** This is the expected result and generally indicates that the plug and fuses are fine. In this case, please proceed to the next step.

2) Advance to a point roughly halfway between the next 2 lamps ⁽¹⁾ and use your proximity type Christmas light string tester to individually test each of the 2 wires. Do this by very carefully separating the 2 wires from each other by a few inches (as shown in the picture) and testing each one with your tester. You will encounter one of the following 2 results:

- a) **The tester indicates the presence of electricity in both wires, or, the tester does not indicate the presence of electricity in either wire.** In this case, the problem lies somewhere between the point you are currently testing and the point you last tested. The problem is probably being caused by one of the following 3 things:
 1. A lamp has burned out or is missing from its socket.
 2. A wire has been severed or has been chewed in half by a rodent or animal.
 3. A wire has been pulled loose from a lamp base (this sometimes happens when someone trips on the wire and is one reason this product is not intended for use in areas where foot traffic is expected).

You should begin working backward toward the spot you last tested, periodically checking the wire and each lamp as you work your way back (most testers can also be used to test the lamps). When you find the problem, make the necessary repairs. Be sure to first unplug the Lawn Lights if necessary! If the lamps do not light once the problem has been fixed, resume execution of this step, working toward the end of the string.

- b) **The tester indicates the presence of electricity in one wire, but not for the other wire.** This is the expected result and generally indicates that everything is fine between the point you are currently testing and the plug. In this case, advance to a point roughly halfway between the next two lamps ⁽¹⁾ and repeat this step.

⁽¹⁾ Note: The time required to execute this troubleshooting procedure can be significantly decreased by skipping several lamps between tests rather than testing between every single lamp. For example, instead of testing between lamps 1 and 2, 2 and 3, 3 and 4, etc., try testing between lamps 4 and 5, 9 and 10, 14 and 15, etc. You will find that this ‘divide and conquer’ method will save you a lot of time and effort. The problem can usually be identified in less than 5 minutes by using this troubleshooting procedure.

Troubleshooting procedure WITHOUT using a proximity type Christmas light string tester:

Troubleshooting Checklist:

- ✓ Check to verify that your GFCI outlet or fuse has not tripped
- ✓ Check to be sure that the fuses are seated properly in the plug
- ✓ Confirm that each bulb is well seated in its socket
- ✓ Verify that none of the bulbs are broken or missing
- ✓ Perform a 'Flick Test'
- ✓ Verify that none of the bulbs appear to be burned out (appear 'blackened')
- ✓ Confirm that no wires have been pulled loose from the lamp bases
- ✓ Verify that a rodent or other animal has not chewed thru the wires
- ✓ Replace the fuses

1) Check to verify that your GFCI outlet has not tripped. Sometimes a set of Lawn Lights will trip a GFCI in wet conditions. If it has in fact tripped, check to see if any part of your set is in a wet environment, such as a ditch or near a gutter outlet. If it is, be sure to move it to a more suitable area. If it has recently rained, it may be necessary to wait until the set has dried out before it can be operated again.

2) Check the plug. "Jiggle" and very lightly twist the plug a bit, and press and release the fuse lid. If the lights flicker or light, it is an indication that the fuses haven't been seated properly in the plug, which sometimes happens. In many cases, simply taking the fuses out, putting them back in, and carefully closing the fuse lid fixes the problem. Be careful when closing the lid that it does not disrupt the position of the fuses. Sometimes the lid will drag the fuses back into the plug with it. Be sure that the fuses touch both strips of metal in the slot.

3) Perform a 'Flick Test'. This is done by going to each bulb and gently 'flicking' it twice with your finger. Many times this will jar the defective bulb and causes the set to work again. If you find a defective bulb by this method, it is recommend that you promptly replace the bulb, since it may be hard to identify it again in the future. While performing the "flick test", confirm that each bulb is well seated in its socket and that none of the bulbs are broken or missing. Sometimes a bulb may be damaged or jarred from its socket during shipment. A broken bulb may work for a while, but then burn out. Verify that no wires have been pulled loose from the lamp bases. This can sometimes happen if someone has wandered into and tripped on your display. Verify that none of the bulbs appear 'blackened', which indicates that they may have burned out. If it appears that most if not all of your bulbs are blackened, the best thing to do is replace every bulb (using the procedure provided later).

4) Perform a visual inspection of the wire. An animal or rodent may have chewed thru the wires.

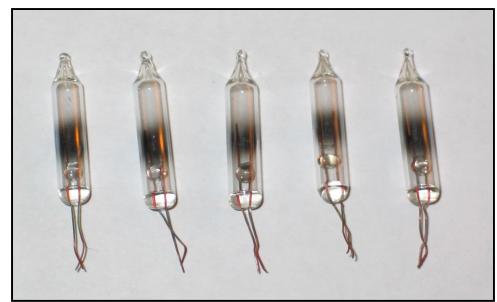
5) Check and/or replace the fuses. It is highly unlikely that a set would blow its fuses. The problem is likely elsewhere. If you choose to change the fuses, be sure that you seat the fuses properly in the plug and carefully close the fuse lid. Be sure the fuses touch both strips of metal in the slot.

7. Maintenance - Replacing lamps

The lamps that Lawn Lights use have a lifespan just like any ordinary light bulb does. Eventually, the lamps will burn out after several hours of operation. Operating Lawn Lights during daylight hours or when the decoration will be rarely seen will only continue to deplete the lamps' lifespan, which is why it is recommended that Lawn Lights be turned off during these periods in order to help preserve the bulb longevity.

It is also highly recommended that the lamps be promptly replaced as they burn out. Each time a lamp burns out, it distributes the power that it would normally consume to the remaining lamps. This slightly increases the burden on the remaining lamps. As more and more lamps burn out, the burden on the remaining lamps increases until eventually it is too much for the remaining lamps and they all burn out in a mass failure. If this happens, you must replace each and every lamp, which takes more time and effort than it would have taken to replace just the few lamps that had burned out initially.

If you inspect your set and notice that most, if not all, of the lamps appear "blackened", you should replace all of the lamps. Blackened bulbs are an indication that some, if not all, of the lamps in the set have been put under extraordinary stress and have been damaged. It is highly likely that these bulbs have burned out or will burn out very soon. Blackened bulbs can be caused by a number of things: the set has been used for several hundred hours and the lifespan of the lamps has been exhausted, the set is not being powered by an outlet equipped with GFCI protection, multiple sets are in use in a wet environment, etc.



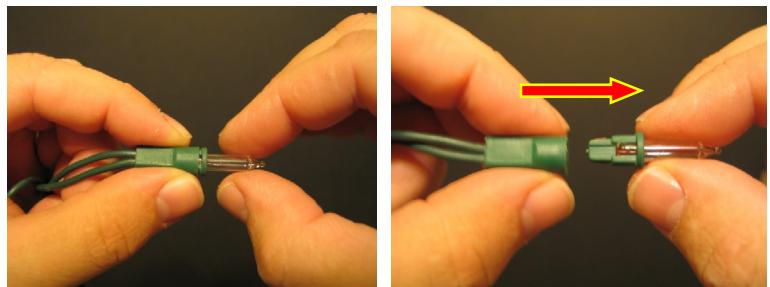
GFCI circuitry will help avoid lamp burnouts that might occur in a rainstorm or wet environment. Operating Lawn Lights without the GFCI circuitry could cause some lamps to burn out when they become wet because the electricity may find a path to ground. If this happens, it's best to replace each and every lamp, which can be a tedious and time-consuming procedure. It is best to avoid it altogether by powering the Lawn Lights and the rest of your outdoor holiday lighting products with a GFCI equipped power outlet.

For a set of Lawn Lights that has already been used for several hundred hours, it is generally recommended that all of its lamps be replaced prior to the set's next use because the remaining lifespan of these lamps may be short. By changing the lamps prior to each lengthy period of use, you can avoid performing maintenance while the set is being used. Typically, it is best to change all of the lamps every year before the set is used. However, this is only a recommendation.

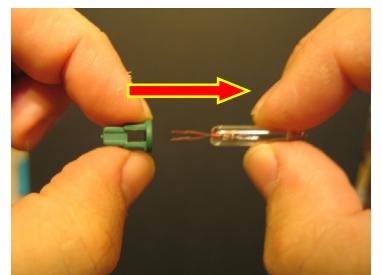
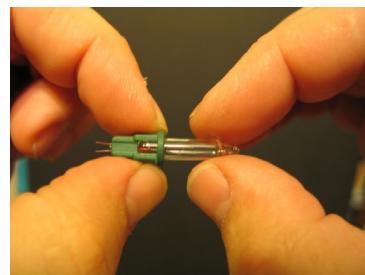
If your Lawn Lights are not working, it is highly recommended that you use a proximity type Christmas light string tester to perform the troubleshooting procedure first, rather than attempting to correct the problem by replacing all of the lamps. There is no guarantee that you will correct the problem by replacing all of the lamps.

If you use the following recommended procedure, you can change all of the lamps in a set of Lawn Lights in about 45 minutes. This time can be significantly reduced if more than 1 person helps perform the procedure!

First, remove all of the old lamps and bases from the Lawn Lights set. This step will take about 6 to 10 minutes. **Be very careful not to lose any of the lamp bases**, since these may be the only ones that will fit in the sockets of your Lawn Lights set!



Remove all of the old lamps from their plastic bases by pulling the lamp out of its base. This step will take about 2 to 5 minutes. It might be easier if you bend the wires down from the base, but this is generally not necessary and only consumes more time. **Keep all of the bases** and discard the old lamps when you are finished.



Acquire some new 2.5-volt replacement lamps. Some retailers sell sets of replacement lamps, but buying large quantities of these can be very expensive. The best source for large quantities of new lamps is to purchase an inexpensive set of mini-lights and use the lamps from it. Be sure that the set you purchase uses 2.5 volt lamps. Sets that use the 2.5 volt lamps have a multiple of 50 lamps in them. In other words, sets that have 50, 100, 150, 200, 300, etc. lamps are acceptable. Sets that have 35, 70, 140, etc. lamps are generally unacceptable.



Remove 50 lamps and bases from the replacement set of lights. This step will take about 3 to 5 minutes.



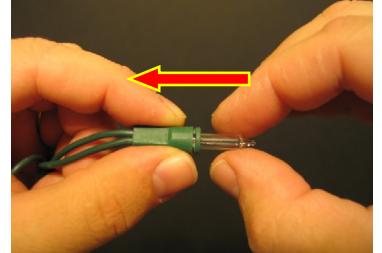
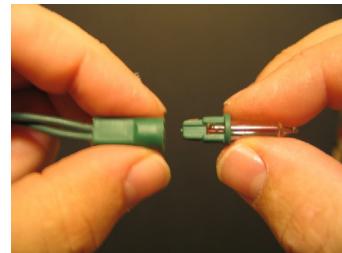
Carefully remove the new lamps from their bases by bending the wires out straight and pulling the lamps out of their bases. This step will take about 6 to 10 minutes. It is recommended that you bend the wires straight before and/or after removing the new lamps from their bases because it will help expedite the next step. **Keep the new lamps** and discard the bases. It is unlikely that these bases will fit in the sockets of your set of Lawn Lights, since most bases are different for each set of lights.



Insert the new lamps into the set's **original bases**. Make sure that each lamp wire goes into the proper base hole and that they get bent back up into place. This step will take about 10 to 15 minutes.



Insert these new lamps and bases back into your Lawn Lights set. This step will take about 9 to 15 minutes. Make sure that each lamp is properly seated in its socket.



If after this procedure the Lawn Lights set does not light, use a proximity type Christmas light string tester to perform the troubleshooting procedure.

